



**LUCINTEL INSIGHT
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FIVE TRENDS SHAPING THE FUTURE OF THE POLARIZER FILM MARKET

The polarizer film market is growing and expanding due to the high rate of use of polarizer films, especially in LCDs. The rising technologies of reflective polarizing film, ultra-thin polarizer film, and direct-coated polarizers are creating significant potential in various television, monitor, notebook, mobile phone, and other applications. The major growth drivers for this market are increasing demand for mobile phones and television displays, increasing demand for larger

panel size, increasing penetration of quantum dot displays (QD-LED) for better visibility, and growth in demand for high-quality organic light-emitting diode (OLED) displays in smartphones.

The polarizer film market is divided into several segments, such as thin film transistor, super twisted nematic, and twisted nematic. Key players in the polarizer film market include Nitto Denko, Sumitomo, Chem, LG Chem, Fujifilm, and Mntech. These have been working on different strategies to drive sales using highly influential marketing approaches; however, as we examine the challenges and opportunities ahead in this market, companies can benefit from a strategy of developing ultra-thin polarizers and coatable polarizers along with the key target market trends we have identified. Lucintel predicts the global polarizer film market will be valued at \$17.1 billion by 2025, with an expected CAGR of approx. 5.0% between 2020 and 2025.

Lucintel identifies five trends set to influence the global polarizer film market. Most of the industry players and experts agree that these five trends will accelerate developments in the polarizer film industry in the near future. In terms of the widespread knowledge about the polarizer film market already on the horizon, there is still a lack of unified perspective on the direction the industry is moving to proactively address developments. To help bring more clarity to this gap, our study aims to provide insights concerning the direction that changes are taking and how these changes will impact the polarizer film market.

1. Development of Ultra-Thin Polarizer Film

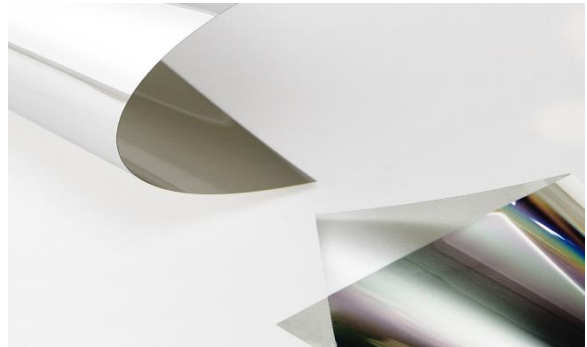
The demand for thinner displays has been increasing, and in order to manufacture slimmer displays, thinner polarizer film with better shrinkage properties, which help to eliminate panel bending, dimensional variance, and panel distortion caused by high shrinkage force, are required. Ultra-thin polarizer film features these qualities, and it



provides high brightness and greater pixel density, which are more suitable for larger displays. Ultra-thin polarizer film also provides better viewing angles and lower power consumption.

2. Development of Blue Light High Transmission Polarizer

The OLED type of display is popular and widely used in mobile devices and large television sets. The conventional polarizer in OLED used red, blue, and green materials in order to realize full colors. It also consumed more power to transmit blue color. This new blue light polarizer contributes to lowering power consumption and prolonging the life of organic EL display.



Polatechno Co., Ltd. developed a new blue light high transmission polarizer for OLED display which uses new dichroic dyes and alignment technology. OLED requires a polarizer to suppress reflection from electrodes. The conventional polarizer reduces luminous efficiency and bypasses features such as lower power consumption and longer life. The new blue light high transmission polarizer contributes to lowering power consumption and prolonging the life of organic EL display.

3. Direct Coatable Polarizer for Flexible, Foldable, and Rollable Displays

One of the major advances in Apple's iPhone X and XS is the use of borderless displays with an edge-to-edge screen. This is called a flexible display, as it can wrap around the edge of the smartphone, and it is widely used in Samsung's Galaxy smartphone



offering as well. Flexible display components were just the first step on the path to fully foldable displays. The company Light Polymers is now perfecting the foldable version of this circular polarizer that is thinner than any current competitive offerings. Light Polymers introduced a thin and durable coatable polarizer for foldable mobile devices. When testing films for flexible or folding displays, the film must meet the static bending test with no deformation. Directly coating a polarizer on PI cover film or retarder film solves the deformation issues that PVA-based polarizer films experience after the bending test.

4. Transflective LCD Polarizer

The transflective LCD polarizer is a combination or hybrid of the reflective and the transmissive polarizer. It reflects some of the ambient light passing through the front of the glass, at the same time allowing some of the light from the backlight to pass through to the front layer of glass.



The advantage of a transflective polarizer is that it allows the display to be read with or without the backlight on. If the liquid crystal display is located in an area with good ambient light, the backlight can be turned off and the display is still legible. When the LCD is moved into poor ambient light, the backlight can be turned on and the display can still be read.

5. Thin Film Transistor Display

A TFT display is a form of liquid crystal display with thin film transistors for controlling image formation. The technology works by controlling brightness in red, green, and blue sub-pixels through transistors

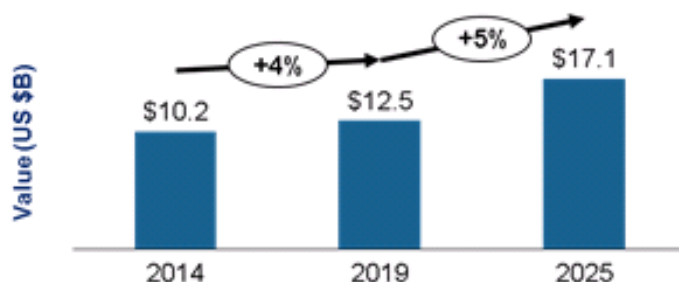


for each pixel on the screen. The liquid-crystal behavior is similar to that of a TN display, relying on 90-degree twisted stacks acting as a waveguide to control the passage of light through the display. ITO electrodes are deposited on the upper and lower glass substrates, and red, green, and blue color filters are deposited on the inner surface of the upper substrate. A thin-film transistor is embedded in every sub-pixel, and connected to the data bus line. This enables the display drive system to address each sub-pixel individually. By controlling the intensity of light transmitted through each color filter, the TFT-LCD can display millions of colors. A storage capacitor is also embedded in each pixel to maintain an applied voltage across the cell during pixel updating. When a signal is applied to the pixel, the liquid crystal changes from its twisted state to align with the electric field and prevent light passing through – much the same as in a TN display. The TFT-LCD is able to switch rapidly between ON and OFF states, allowing response times fast enough to support rapid display-update rates suitable for presenting video content or smooth animation.

Strategic Considerations for Key Players in the Polarizer Film Market

The polarizer film industry is dynamic and ever-changing. Successful industry players are necessarily masters of innovation, change, and adaptation. To retain this status, they need to be attentive to current trends. We believe there will be promising opportunities for polarizer film in the television, monitor, notebook, and cell phone markets. As per Lucintel's latest market research report (Source: <https://www.lucintel.com/polarizer-film-market.aspx>), the [polarizer film market](#) is expected to grow with a CAGR of approx. 5.0% between 2020 and 2025, and reach \$17.1 billion by 2025. This market is primarily driven by the increasing demand for mobile phones and television displays, increasing demand for larger panel size, increasing penetration of quantum dot displays (QD-LED) for better visibility, and growth in demand for high-quality organic light-emitting diode (OLED) displays in smartphones.

Trends and Forecast for the Global Polarizer Film Market (US \$B) (2014-2025)



Source: Lucintel

Whether you are new to the polarizer film market or an experienced player, it is important to understand the trends that impact the development process, as these trends as listed above will lead players to create long-term strategy formulation that will allow them to remain competitive and successful in the long run. For example, to capture growth, some of the strategic considerations for players in the polarizer film market are as follows:

- Polarizer film market players can increase their capabilities to develop ultra-thin polarizers which can provide better viewing angles and lower power consumption.
- Players can focus on increasing their capabilities in energy-efficient OLED and AMOLED displays, which are expected to lead future trends.
- Investment to increase competencies in the development of polarizer film for flexible, foldable, and rollable displays
- Research and development activities to develop brighter and more vibrant displays

Note: In order to gain better understanding, and learn more about the scope, benefits, and companies researched, as well as other details in the polarizer film market report from Lucintel, click on <https://www.lucintel.com/polarizer-film-market.aspx>. This comprehensive report provides you in-depth analysis on market trends and forecast, segment analysis, regional analysis, competitive benchmarking, and company profiling of key players. In addition, we also offer **strategic growth consulting** to meet your customized needs. We have worked with many PE firms and corporate customers in the process of their market entry and M & A initiatives.

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- Management comprised of PhDs, MBAs, and subject matter experts. Head quarter in Dallas, USA.

Conducted 500+ consulting projects across industries for 3M, Audi, Dupont, Carlyle, GE, etc.

Consulting Services



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Industries Served



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